

U.S. Patent Application Serial No. 09/830,232
Reply to Office Action dated February 7, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-8. (Cancelled)

9. (Currently Amended) A device for the reception of a multicarrier signal, formed by a set of carrier frequencies, said device implementing at least two reception paths supplied with data flows, each conveying a same source symbol ($x_k(n)$), each of said reception paths comprising ~~estimation means~~ an estimator associating with each source symbol received, an estimated path value and a corresponding ^{path} confidence information element, wherein said source symbols are conveyed by a subset of said set of carrier frequencies, said device comprising means for ~~combination of~~ combining said estimated path values delivering:

an adapted estimated value, obtained from said estimated path values, in taking account of said ^{corresponding} path confidence information ^{element} to weight said estimated path values; and

an adapted confidence information element, ~~and said device further comprising:~~

a weighted-input ~~decoding means~~ decoder supplied by said adapted estimated value, wherein said means for ~~the combination~~ combining computes said adapted estimated value as follows:

$$\hat{x}_{\text{adapt},n} = \left(\sum_{i=1}^N \text{cnfd}_{i,n} \times \hat{x}_{i,n} \right) / \left(\sum_{i=1}^N \text{cnfd}_{i,n} \right)$$

where:

$\hat{x}_{i,n}$ is the estimated value of the symbol received on the path i ;

$\text{cnfd}_{i,n}$ is the corresponding ^{path} confidence information element; and

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N is the number of paths.

- 4 ~~10~~. (Currently Amended) A device for the reception of a multicarrier signal, formed by a set of carrier frequencies, said device implementing at least two reception paths supplied with data flows, each conveying a same source symbol ($x_k(n)$), each of said reception paths comprising ~~estimation means~~ an estimator associating with each source symbol received, an estimated path value and a corresponding ^{path} confidence information element,

said source symbols being conveyed by a subset of said set of carrier frequencies,

said device comprising means for ~~combination of~~ combining said estimated path values delivering:

an adapted estimated value, obtained from said estimated path values, in taking account of said corresponding path confidence information ^{element} to weight said estimated path values, and;

an adapted confidence information element, as a sum of said path confidence information elements, and said device further comprising:

a weighted-input ~~decoding means~~ decoder supplied by said adapted estimated value, wherein said means for ~~combination~~ combining computes said adapted confidence information element as follows:

$$cnfd_{Adap, n} = \sum_{i=1}^N cnfd_{i, n}$$

where:

$cnfd_{i, n}$ is the corresponding ^{path} confidence information element associated with the path i ;
 and

N is the number of paths.

- 2 ~~11~~. (Previously Presented) A device for reception according to claim ~~8~~ ¹, wherein the reception device implements at least two antennas supplying distinct reception paths.

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- 3 ~~12.~~ (Currently Amended) A device for reception according to claim ¹~~9~~, wherein each of said reception paths comprises a first module shaping and demodulating the received signal and a second module determining said estimated path values and said corresponding confidence information elements, said device further comprising a single module supplied by said second module of each reception path, and providing for said means for ~~combination~~ combining said adapted estimated values and said weighted-input ~~decoding means~~ decoder supplied with said adapted estimated value.
- 5 ~~13.~~ (Previously Presented) A device for reception according to claim ⁴~~10~~, wherein the reception device implements at least two antennas supplying distinct reception paths.
- 6 ~~14.~~ (Currently Amended) A device for reception according to claim ⁴~~10~~, wherein each of said reception paths comprises a first module shaping and demodulating the received signal and a second module determining said estimated path values and said corresponding confidence information elements, said device further comprising a single module supplied by said second module of each reception path, and providing for said means for ~~combination~~ combining delivering said adapted estimated values and said weighted-input ~~decoding means~~ decoder supplied with said adapted estimated value.
- 7 ~~15.~~ (Currently Amended) A method for the reception of a multicarrier signal, ~~former~~ formed by a set of carrier frequencies transmitted simultaneously, implementing at least two reception paths supplied with data flows, each conveying the same source symbols, each of said paths implementing a step of ~~estimation of the~~ estimating of a transmission channel associating, with each source symbol received, an estimated path value and a corresponding path confidence information element a source symbol being conveyed by a subset of said set of carrier frequencies, said method comprising:

a combination step of delivering:

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an adapted estimated value, obtained from said estimated path values in taking account of said corresponding path confidence information element to weight said estimated path values; and

an adapted confidence information element with each of said adapted estimated values, wherein said adapted estimated value is computed as follows:

$$\hat{x}_{adapt,n} = \left(\sum_{i=1}^N cnfd_{i,n} \times \hat{x}_{i,n} \right) / \left(\sum_{i=1}^N cnfd_{i,n} \right)$$

where:

$\hat{x}_{i,n}$ is the estimated value of the symbol received on the path i ,

$cnfd_{i,n}$ is the corresponding path confidence information element, and

N is the number of paths; and

a step of weighted-input decoding, ~~supplied by~~ taking into account said adapted estimated values.

- 8 ~~16~~. (Currently Amended) A method for the reception of a multicarrier signal, ~~former~~ formed by a set of carrier frequencies transmitted simultaneously, implementing at least two reception paths supplied with data flows, each conveying the same source symbols, each of said paths implementing a step of ~~estimation of the~~ estimating of a transmission channel associating, with each source symbol received, an estimated path value and a corresponding path confidence information element, a source symbol being conveyed by a subset of said set of carrier frequencies, said method comprising:

combining and delivering:

an adapted estimated value, obtained from said estimated path values in taking account of said corresponding path confidence information element to weight said estimated path values, and

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an adapted confidence information element with each of said adapted estimated values, wherein said adapted confidence information element is computed as follows:

$$cnfd_{Adap. n} = \sum_{i=1}^N cnfd_{i, n}$$

where:

$cnfd_{i, n}$ is the corresponding ^{path} _{λ} confidence information element associated with the path i , and

N is the number of paths; and
 weighted-input decoding, ~~supplied by~~ taking into account said adapted estimated values.